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SEQUENCE LISTING

<110> Bayer AG

<120> Regulation of Human BMP2 Inducible Kinase

<130> 004974.00851

<150> US 60/367,512

<151> 2002-03-27

<150> US 60/406,936

<151> 2002-08-30

<160> 9

<170> FastSEQ for Windows Version 4.0

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<211> 3507

<212> DNA

<213> Homo sapiens

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<210> 2

<211> 1168

<212> PRT

<213> Homo sapiens

<400> 2

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35 40 45	
His Gln Val Thr Leu Glu Glu Ser Leu Ala Glu Gly Gly Phe Ser Thr	
50 55 60	
Val Phe Leu Val Arg Thr His Gly Gly Ile Arg Cys Ala Leu Lys Arg	
65 70 75 80	
Met Tyr Val Asn Asn Met Pro Asp Leu Asn Val Cys Lys Arg Glu Ile	
85 90 95	
Thr Ile Met Lys Glu Leu Ser Gly His Lys Asn Ile Val Gly Tyr Leu	
100 105 110	
Asp Cys Ala Val Asn Ser Ile Ser Asp Asn Val Trp Glu Val Leu Ile	
115 120 125	
Leu Met Glu Tyr Cys Arg Ala Gly Gln Val Val Asn Gln Met Asn Lys	
130 135 140	
Lys Leu Gln Thr Gly Phe Thr Glu Pro Glu Val Leu Gln Ile Phe Cys	
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Asp Thr Cys Glu Ala Val Ala Arg Leu His Gln Cys Lys Thr Pro Ile	
165 170 175	
Ile His Arg Asp Leu Lys Val Glu Asn Ile Leu Leu Asn Asp Gly Gly	
180 185 190	
Asn Tyr Val Leu Cys Asp Phe Gly Ser Ala Thr Asn Lys Phe Leu Asn	
195 200 205	

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Pro Gln Lys Asp Gly Val Asn Val Val Glu Glu Ile Lys Lys Tyr
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 Thr Thr Leu Ser Tyr Arg Ala Pro Glu Met Ile Asn Leu Tyr Gly Gly
 225 230 235 240
 Lys Pro Ile Thr Thr Lys Ala Asp Ile Trp Ala Leu Gly Cys Leu Leu
 245 250 255
 Tyr Lys Leu Cys Phe Phe Thr Leu Pro Phe Gly Glu Ser Gln Val Ala
 260 265 270
 Ile Cys Asp Gly Asn Phe Thr Ile Pro Asp Asn Ser Arg Tyr Ser Arg
 275 280 285
 Asn Ile His Cys Leu Ile Arg Phe Met Leu Glu Pro Asp Pro Glu His
 290 295 300
 Arg Pro Asp Ile Phe Gln Val Ser Tyr Phe Ala Phe Lys Phe Ala Lys
 305 310 315 320
 Lys Asp Cys Pro Val Ser Asn Ile Asn Asn Ser Ser Ile Pro Ser Ala
 325 330 335
 Leu Pro Glu Pro Met Thr Ala Ser Glu Ala Ala Ala Arg Lys Ser Gln
 340 345 350
 Ile Lys Ala Arg Ile Thr Asp Thr Ile Gly Pro Thr Glu Thr Ser Ile
 355 360 365
 Ala Pro Arg Gln Arg Pro Lys Ala Asn Ser Ala Thr Thr Ala Thr Pro
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 Ser Val Leu Thr Ile Gln Ser Ser Ala Thr Pro Val Lys Val Leu Ala
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 Pro Gly Glu Phe Gly Asn His Arg Pro Lys Gly Ala Leu Arg Pro Gly
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 Gln Gln His Val Leu Gln Gln Gln Gly Asp Trp Arg Leu
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 450 455 460
 Gln
 465 470 475 480
 Gln Gln Gln Gln His Leu Leu
 485 490 495
 Gln Asp Ala Tyr Met Gln Gln Tyr Gln His Ala Thr Gln Gln Gln
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 Met Leu Gln Gln Gln Phe Leu Met His Ser Val Tyr Gln Pro Gln Pro
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 530 535 540
 Phe Gln Gln Gln Met Leu Ala Gln His Gln Pro Ser Gln Gln Gln Ala
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 Ser Pro Glu Tyr Leu Thr Ser Pro Gln Glu Phe Ser Pro Ala Leu Val
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 Ser Tyr Thr Ser Ser Leu Pro Ala Gln Val Gly Thr Ile Met Asp Ser
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 595 600 605
 Glu Ala Ile Ala Asn Phe Thr Asn Gln Lys Asn Ile Ser Asn Pro Pro
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 Asp Met Ser Gly Trp Asn Pro Phe Gly Glu Asp Asn Phe Ser Lys Leu
 625 630 635 640
 Thr Glu Glu Glu Leu Leu Asp Arg Glu Phe Asp Leu Leu Arg Ser Asn
 645 650 655
 Arg Leu Glu Glu Arg Ala Ser Ser Asp Lys Asn Val Asp Ser Leu Ser
 660 665 670
 Ala Pro His Asn His Pro Pro Glu Asp Pro Phe Gly Ser Val Pro Phe

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690	695	700
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Thr Ser Pro Ala Ser Lys Asp Gln Arg Thr Gly Lys Lys Thr Ser Val		
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Gln Gly Gln Val Gln Lys Gly Asn Asp Glu Ser Glu Ser Asp Phe Glu		
740	745	750
Ser Asp Pro Pro Ser Pro Lys Ser Ser Glu Glu Glu Glu Gln Asp Asp		
755	760	765
Glu Glu Val Leu Gln Gly Glu Gln Gly Asp Phe Asn Asp Asp Asp Thr		
770	775	780
Glu Pro Glu Asn Leu Gly His Arg Pro Leu Leu Met Asp Ser Glu Asp		
785	790	795
800		
Glu Glu Glu Glu Lys His Ser Ser Asp Ser Asp Tyr Glu Gln Ala		
805	810	815
Lys Ala Lys Tyr Ser Asp Met Ser Ser Val Tyr Arg Asp Arg Ser Gly		
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Ser Gly Pro Thr Gln Asp Leu Asn Thr Ile Leu Leu Thr Ser Ala Gln		
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Leu Ser Ser Asp Val Ala Val Glu Thr Pro Lys Gln Glu Phe Asp Val		
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Phe Gly Ala Val Pro Phe Phe Ala Val Arg Ala Gln Gln Pro Gln Gln		
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885	890	895
Leu Glu Gln Glu Glu Phe Asp Val Phe Thr Lys Ala Pro Phe Ser Lys		
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Lys Val Asn Val Gln Glu Cys His Ala Val Gly Pro Glu Ala His Thr		
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Ile Pro Gly Tyr Pro Lys Ser Val Asp Val Phe Gly Ser Thr Pro Phe		
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Gln Pro Phe Leu Thr Ser Thr Ser Lys Ser Glu Ser Asn Glu Asp Leu		
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Phe Gly Leu Val Pro Phe Asp Glu Ile Thr Gly Ser Gln Gln Lys		
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Val Lys Gln Arg Ser Leu Gln Lys Leu Ser Ser Arg Gln Arg Arg Thr		
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Lys Gln Asp Met Ser Lys Ser Asn Gly Lys Arg His His Gly Thr Pro		
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Thr Ser Thr Lys Lys Thr Leu Lys Pro Thr Tyr Arg Thr Pro Glu Arg		
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Thr Asp Gly Lys Asp Arg Gly Asn Val Leu Gln Pro Glu Glu Ser Leu		
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Leu Asp Pro Phe Gly Ala Lys Pro Phe His Ser Pro Asp Leu Ser Trp		
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His Pro Pro His Gln Gly Leu Ser Asp Ile Arg Ala Asp His Asn Thr		
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Val Leu Pro Gly Arg Pro Arg Gln Asn Ser Leu His Gly Ser Phe His		
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1120		
Ser Ala Asp Val Leu Lys Met Asp Asp Phe Gly Ala Val Pro Phe Thr		
1125	1130	1135
Glu Leu Val Val Gln Ser Ile Thr Pro His Gln Ser Gln Gln Ser Gln		
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 1155 . 1160 . 1165 .

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<211> 3704
<212> DNA
<213> *Homo sapiens*

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<211> 1138
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<213> Mus musculus

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Val Arg Thr His Ser Gly Ile Arg Cys Ala Leu Lys Arg Met Tyr Val	
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Lys Glu Leu Ser Gly His Lys Asn Ile Val Gly Tyr Leu Asp Cys Ala	
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Leu Cys Asp Phe Gly Ser Ala Thr Asn Lys Phe Leu Asn Pro Gln Lys	
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Asp Gly Val Asn Val Val Glu Glu Glu Ile Lys Lys Tyr Thr Thr Leu	
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Ser Tyr Arg Ala Pro Glu Met Ile Asn Leu Tyr Gly Gly Lys Pro Ile	
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Thr Thr Lys Ala Asp Ile Trp Ala Leu Gly Cys Leu Leu Tyr Lys Leu	
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Cys Phe Phe Thr Leu Pro Phe Gly Glu Ser Gln Val Ala Ile Cys Asp	
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Gly Ser Phe Thr Ile Pro Asp Asn Ser Arg Tyr Ser His Asn Val His	
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 325 330 335
 Pro Met Thr Ala Thr Glu Ala Ala Ala Arg Lys Ser Gln Met Lys Ala
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 Arg Ile Thr Asp Thr Ile Gly Pro Thr Glu Thr Ser Ile Ala Pro Arg
 355 360 365
 Gln Arg Pro Lys Ala Asn Ser Thr Ala Ala Thr Ser Ser Val Leu Thr
 370 375 380
 Ile Gln Ser Ser Ala Thr Pro Val Lys Val Pro Ala Pro Gly Glu Phe
 385 390 395 400
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 405 410 415
 Val Leu Met Val Gln Gly Pro Pro Gln Gln Pro Pro Gln Gln His Arg
 420 425 430
 Val Leu Gln Gln Leu Gln Gln Gly Asp Trp Arg Leu Gln Gln Leu His
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 Gln Gln His Ile Leu Gln Gln Phe Leu Met His Ser Val Tyr Gln
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 Pro Gln Pro Pro Met Ser Gln Tyr Pro Ala Met Met Gln Gln Tyr Gln
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 Ala Leu Val Ser Tyr Ala Ser Ser Leu Pro Ala Gln Val Gly Thr Ile
 565 570 575
 Val Asp Ser Ser Tyr Gly Ala Asn Arg Ser Val Ala Glu Lys Glu Ala
 580 585 590
 Val Ala Asn Phe Thr Asn Gln Lys Thr Ile Ser His Pro Pro Asp Met
 595 600 605
 Ser Gly Trp Asn Pro Phe Gly Glu Asp Asn Phe Ser Lys Leu Thr Glu
 610 615 620
 Glu Glu Leu Leu Asp Arg Glu Phe Asp Leu Leu Arg Ser Asn Arg Leu
 625 630 635 640
 Gly Ala Ser Thr Pro Ser Asp Lys Thr Val Asp Leu Pro Pro Ala Pro
 645 650 655
 His Ser Arg Pro Pro Glu Glu Pro Phe Ala Ser Val Pro Phe Ile Ser
 660 665 670
 His Ser Gly Ser Pro Glu Lys Lys Thr Thr Glu His Ser Pro Asn Gln
 675 680 685
 Lys Ser Ile Thr Ala Asn Leu Thr Lys Asn Gly Gly Ser Ser Pro Leu
 690 695 700
 Cys Lys Asp Gln Arg Ala Gly Lys Lys Thr Ser Glu Asn Pro Val Ile
 705 710 715 720
 Arg Gly Gln Val Gln Lys Gly His Asp Asp Ser Glu Ser Asp Phe Glu
 725 730 735
 Ser Asp Pro Pro Ser Pro Lys Ser Ser Glu Glu Glu Gln Glu Asp Glu
 740 745 750

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Asp	Ala	Gln	Gly	Glu	His	Gly	Asp	Phe	Asn	Asp	Asp	Asp	Thr	Glu	Pro
755				760					765						
Glu	Asn	Leu	Gly	His	Arg	Pro	Leu	Leu	Met	Asp	Ser	Glu	Asp	Glu	Glu
770				775					780						
Glu	Asp	Asp	Lys	His	Ser	Ser	Asp	Ser	Glu	Cys	Glu	Gln	Ala	Lys	Thr
785				790					795						800
Lys	Arg	Gly	Asp	Thr	Ser	Ser	Leu	Arg	Arg	Asp	Lys	Pro	Gly	Val	Ala
	805							810						815	
Pro	Asp	Thr	Ala	Leu	Leu	Thr	Pro	Ala	Arg	Ser	Pro	Ala	Asp	Ala	Leu
	820						825						830		
Thr	Pro	Ser	Gln	Glu	Phe	Asp	Val	Phe	Gly	Ala	Val	Pro	Phe	Phe	Ala
	835						840						845		
Ala	Pro	Ala	Pro	Gln	Ser	Leu	Gln	His	Arg	Gly	Asp	Gly	Lys	Asn	Leu
	850						855						860		
Ser	Gln	His	Ala	Phe	Pro	Glu	Gln	Glu	Asp	Phe	Asp	Val	Phe	Thr	Lys
	865						870						875		880
Ala	Pro	Phe	Asn	Lys	Lys	Val	Ser	Val	Gln	Asp	Trp	Pro	Ala	Val	Gly
				885					890						895
Pro	Asp	Ala	Arg	Pro	Leu	Pro	Ala	Arg	Pro	Arg	Ser	Val	Asp	Ile	Phe
				900				905						910	
Gly	Ser	Thr	Pro	Phe	Gln	Pro	Phe	Ser	Val	Ser	Ala	Ser	Lys	Ser	Glu
	915						920						925		
Ser	Lys	Glu	Asp	Val	Phe	Gly	Leu	Val	Pro	Phe	Glu	Glu	Ile	Thr	Gly
	930						935						940		
Ser	Gln	Gln	Gln	Lys	Val	Lys	Gln	Arg	Ser	Leu	Gln	Lys	Leu	Ser	
	945						950						955		960
Ser	Arg	Gln	Arg	Arg	Thr	Lys	Gln	Asp	Val	Ser	Lys	Ser	Asn	Gly	Lys
							965						970		975
Arg	His	His	Gly	Thr	Pro	Thr	Ser	Ala	Lys	Lys	Thr	Leu	Lys	Pro	Pro
							980						985		990
Tyr	Arg	Thr	Pro	Glu	Arg	Ala	Arg	Arg	His	Lys	Lys	Val	Gly	Arg	Arg
							995						1000		1005
Asp	Ser	Gln	Ser	Ser	Asn	Glu	Phe	Leu	Thr	Ile	Ser	Asp	Ser	Lys	Glu
							1010						1015		1020
Asn	Ile	Ser	Val	Ala	Leu	Thr	Asp	Gly	Lys	Asp	Arg	Ala	Ser	Val	Leu
	1025						1030						1035		1040
Pro	Ser	Asp	Glu	Ser	Leu	Leu	Asp	Pro	Phe	Gly	Ala	Lys	Pro	Phe	His
							1045						1050		1055
Pro	Pro	Asp	Leu	Trp	His	Gln	Pro	His	Gln	Gly	Leu	Ser	Asp	Ile	Cys
							1060						1065		1070
Val	Asp	His	Thr	Thr	Ile	Leu	Pro	Gly	Arg	Pro	Arg	Gln	Asn	Ser	Val
							1075						1080		1085
His	Gly	Ser	Phe	His	Ser	Ala	Glu	Thr	Leu	Arg	Met	Asp	Asp	Phe	Gly
	1090						1095						1100		
Ala	Val	Pro	Phe	Thr	Glu	Leu	Leu	Val	Val	Gln	Ser	Val	Thr	Pro	Gln
	1105						1110						1115		1120
Ser	Gln	Pro	Val	Glu	Leu	Asp	Pro	Phe	Gly	Ala	Ala	Pro	Phe	Pro	Ser
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Lys	Gln														

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<212> PRT
<213> Homo sapiens

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<400> 5

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 Leu Gly Gly Ala Ser Gly Arg Asp Gln Ser Asp Phe Val Gly Gln Thr
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 Val Glu Leu Gly Glu Leu Arg Leu Arg Val Arg Val Leu Ala Glu
 35 40 45
 Gly Gly Phe Ala Phe Val Tyr Glu Ala Gln Asp Val Gly Ser Gly Arg
 50 55 60
 Glu Tyr Ala Leu Lys Arg Leu Leu Ser Asn Glu Glu Glu Lys Asn Arg
 65 70 75 80
 Ala Ile Ile Gln Glu Val Cys Phe Met Lys Lys Leu Ser Gly His Pro
 85 90 95
 Asn Ile Val Gln Phe Cys Ser Ala Ala Ser Ile Gly Lys Glu Glu Ser
 100 105 110
 Asp Thr Gly Gln Ala Glu Phe Leu Leu Leu Thr Glu Leu Cys Lys Gly
 115 120 125
 Gln Leu Val Glu Phe Leu Lys Lys Met Glu Ser Arg Gly Pro Leu Ser
 130 135 140
 Cys Asp Thr Val Leu Lys Ile Phe Tyr Gln Thr Cys Arg Ala Val Gln
 145 150 155 160
 His Met His Arg Gln Lys Pro Pro Ile Ile His Arg Asp Leu Lys Val
 165 170 175
 Glu Asn Leu Leu Ser Asn Gln Gly Thr Ile Lys Leu Cys Asp Phe
 180 185 190
 Gly Ser Ala Thr Thr Ile Ser His Tyr Pro Asp Tyr Ser Trp Ser Ala
 195 200 205
 Gln Arg Arg Ala Leu Val Glu Glu Glu Ile Thr Arg Asn Thr Thr Pr.
 210 215 220
 Met Tyr Arg Thr Pro Glu Ile Ile Asp Leu Tyr Ser Asn Phe Pro Ile
 225 230 235 240
 Gly Glu Lys Gln Asp Ile Trp Ala Leu Gly Cys Ile Leu Tyr Leu Leu
 245 250 255
 Cys Phe Arg Gln His Pro Phe Glu Asp Gly Ala Lys Leu Arg Ile Val
 260 265 270
 Asn Gly Lys Tyr Ser Ile Pro Pro His Asp Thr Gln Tyr Thr Val Phe
 275 280 285
 His Ser Leu Ile Arg Ala Met Leu Gln Val Asn Pro Glu Glu Arg Leu
 290 295 300
 Ser Ile Ala Glu Val Val His Gln Leu Gln Glu Ile Ala Ala Ala Arg
 305 310 315 320
 Asn Val Asn Pro Lys Ser Pro Ile Thr Glu Leu Leu Glu Gln Asn Gly
 325 330 335
 Gly Tyr Gly Ser Ala Thr Leu Ser Arg Gly Pro Pro Pro Val Gly
 340 345 350
 Pro Ala Gly Ser Gly Tyr Ser Gly Gly Leu Ala Leu Ala Glu Tyr Asp
 355 360 365
 Gln Pro Tyr Gly Gly Phe Leu Asp Ile Leu Arg Gly Gly Thr Glu Arg
 370 375 380
 Leu Phe Thr Asn Leu Lys Asp Thr Ser Ser Lys Val Ile Gln Ser Val
 385 390 395 400
 Ala Asn Tyr Ala Lys Gly Asp Leu Asp Ile Ser Tyr Ile Thr Ser Arg
 405 410 415
 Ile Ala Val Met Ser Phe Pro Ala Glu Gly Val Glu Ser Ala Leu Lys
 420 425 430
 Asn Asn Ile Glu Asp Val Arg Leu Phe Leu Asp Ser Lys His Pro Gly
 435 440 445
 His Tyr Ala Val Tyr Asn Leu Ser Pro Arg Thr Tyr Arg Pro Ser Arg
 450 455 460

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Phe	His	Asn	Arg	Val	Ser	Glu	Cys	Gly	Trp	Ala	Ala	Arg	Arg	Ala	Pro
465										475					480
His	Leu	His	Thr	Leu	Tyr	Asn	Ile	Cys	Arg	Asn	Met	His	Ala	Trp	Leu
										490					495
485															
Arg	Gln	Asp	His	Lys	Asn	Val	Cys	Val	Val	His	Cys	Met	Asp	Gly	Arg
										505					510
500															
Ala	Ala	Ser	Ala	Val	Ala	Val	Cys	Ser	Phe	Leu	Cys	Phe	Cys	Arg	Leu
										520					525
515															
Phe	Ser	Thr	Ala	Glu	Ala	Ala	Val	Tyr	Met	Phe	Ser	Met	Lys	Arg	Cys
										535					540
530															
Pro	Pro	Gly	Ile	Trp	Pro	Ser	His	Lys	Arg	Tyr	Ile	Glu	Tyr	Met	Cys
										550		555			560
545															
Asp	Met	Val	Ala	Glu	Glu	Pro	Ile	Thr	Pro	His	Ser	Lys	Pro	Ile	Leu
										565		570			575
560															
Val	Arg	Ala	Val	Val	Met	Thr	Pro	Val	Pro	Leu	Phe	Ser	Lys	Gln	Arg
										580		585			590
585															
Ser	Gly	Cys	Arg	Pro	Phe	Cys	Glu	Val	Tyr	Val	Gly	Asp	Glu	Arg	Val
										595		600			605
595															
Ala	Ser	Thr	Ser	Gln	Glu	Tyr	Asp	Lys	Met	Arg	Asp	Phe	Lys	Ile	Glu
										610		615			620
610															
Asp	Gly	Lys	Ala	Val	Ile	Pro	Leu	Gly	Val	Thr	Val	Gln	Gly	Asp	Val
										625		630			640
625															
Leu	Ile	Val	Ile	Tyr	His	Ala	Arg	Ser	Thr	Leu	Gly	Gly	Arg	Leu	Gln
										645		650			655
645															
Ala	Lys	Met	Ala	Ser	Met	Lys	Met	Phe	Gln	Ile	Gln	Phe	His	Thr	Gly
										660		665			670
660															
Phe	Val	Pro	Arg	Asn	Ala	Thr	Thr	Val	Lys	Phe	Ala	Lys	Tyr	Asp	Leu
										675		680			685
675															
Asp	Ala	Cys	Asp	Ile	Gln	Glu	Lys	Tyr	Pro			Phe	Gln	Val	Asn
										690		695			
690															
Leu	Glu	Val	Glu	Val	Glu	Pro	Arg	Asp	Arg	Pro	Ser	Arg	Glu	Ala	Pro
										705		710			720
705															
Pro	Trp	Glu	Asn	Ser	Ser	Met	Arg	Gly	Leu	Asn	Pro	Lys	Ile	Leu	Phe
										725		730			735
725															
Ser	Ser	Arg	Glu	Glu	Gln	Asp	Ile	Leu	Ser	Lys	Phe	Gly	Lys	Pro	
										740		745			750
740															
Glu	Leu	Pro	Arg	Gln	Pro	Gly	Ser	Thr	Ala	Gln	Tyr	Asp	Ala	Gly	Ala
										755		760			765
755															
Gly	Ser	Pro	Glu	Ala	Glu	Pro	Thr	Asp	Ser	Asp	Ser	Pro	Pro	Ser	Ser
										770		775			780
770															
Ser	Ala	Asp	Ala	Ser	Arg	Phe	Leu	His	Thr	Leu	Asp	Trp	Gln	Glu	Glu
										785		790			800
785															
Lys	Glu	Ala	Glu	Thr	Gly	Ala	Glu	Asn	Ala	Ser	Ser	Lys	Glu	Ser	Glu
										805		810			815
805															
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Val	Asp	Leu	Leu	Gly	Leu	His	Ser	Glu	Val	Gly	Ala	Gly	Pro	Ala	Val
										885		890			895
885															
Pro	Pro	Gln	Ala	Cys	Lys	Ala	Pro	Ser	Ser	Asn	Thr	Asp	Leu	Leu	Ser
										900		905			910
900															
Cys	Leu	Leu	Gly	Pro	Pro	Glu	Ala	Ala	Ser	Gln	Gly	Pro	Pro	Glu	Asp
										915		920			925

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Leu	Leu	Ser	Glu	Asp	Pro	Leu	Leu	Leu	Ala	Ser	Pro	Ala	Pro	Pro	Leu	
930	.	.	935	.	.	940	.	.	945	.	.	950	.	.	955	960
Ser	Val	Gln	Ser	Thr	Pro	Arg	Gly	Gly	Pro	Pro	Ala	Ala	Ala	Asp	Pro	
945	.	.	950	.	.	955	.	.	960	.	.	965	.	.	970	975
Phe	Gly	Pro	Leu	Leu	Pro	Ser	Ser	Gly	Asn	Asn	Ser	Gln	Pro	Cys	Ser	
965	.	.	970	.	.	975	.	.	980	.	.	985	.	.	990	995
Asn	Pro	Asp	Leu	Phe	Gly	Glu	Phe	Leu	Asn	Ser	Asp	Ser	Val	Thr	Val	
980	.	.	985	.	.	990	.	.	995	.	.	1000	.	.	1005	1010
Pro	Pro	Ser	Phe	Pro	Ser	Ala	His	Ser	Ala	Pro	Pro	Pro	Ser	Cys	Ser	
995	.	.	1000	.	.	1005	.	.	1010	.	.	1015	.	.	1020	1025
Ala	Asp	Phe	Leu	His	Leu	Gly	Asp	Leu	Pro	Gly	Glu	Pro	Ser	Lys	Met	
1010	.	.	1015	.	.	1020	.	.	1025	.	.	1030	.	.	1035	1040
Thr	Ala	Ser	Ser	Ser	Asn	Pro	Asp	Leu	Leu	Gly	Gly	Trp	Ala	Ala	Trp	
1025	.	.	.	1030	.	1035	.	.	1040	.	.	1045	.	.	1050	1055
Thr	Glu	Thr	Ala	Ala	Ser	Ala	Val	Ala	Pro	Thr	Pro	Ala	Thr	Glu	Gly	
1045	.	.	1050	.	.	1055	.	.	1060	.	.	1065	.	.	1070	1075
Pro	Leu	Phe	Ser	Pro	Gly	Gly	Gln	Pro	Ala	Pro	Cys	Gly	Ser	Gln	Ala	
1060	.	.	1065	.	.	1070	.	.	1075	.	.	1080	.	.	1085	1090
Leu	Ser	Ser	Gly	Leu	Gln	Gly	Ser	Pro	Ala	Gly	Phe	Pro	Pro	Gly	Gly	
1090	.	.	1095	.	.	1100	.	.	1105	.	.	1110	.	.	1115	1120
Phe	Ile	Pro	Lys	Thr	Ala	Thr	Thr	Pro	Lys	Gly	Ser	Ser	Ser	Trp	Gln	
1105	.	.	1110	.	.	1115	.	.	1120	.	.	1125	.	.	1130	1135
Thr	Ser	Arg	Pro	Pro	Ala	Gln	Gly	Ala	Ser	Trp	Pro	Pro	Gln	Ala	Lys	
1125	.	.	1130	.	.	1135	.	.	1140	.	.	1145	.	.	1150	1155
Pro	Pro	Pro	Lys	Ala	Cys	Thr	Gln	Pro	Arg	Pro	Asn	Tyr	Ala	Ser	Asn	
1140	.	.	1145	.	.	1150	.	.	1155	.	.	1160	.	.	1165	1170
Phe	Ser	Val	Ile	Gly	Arg	Glu	Glu	Arg	Gly	Val	Arg	Ala	Pro	Ser		
1155	.	.	1160	.	.	1165	.	.	1170	.	.	1175	.	.	1180	1185
Phe	Ala	Gln	Lys	Pro	Lys	Val	Ser	Glu	Asn	Asp	Phe	Glu	Asp	Leu	Leu	
1170	.	.	1175	.	.	1180	.	.	1185	.	.	1190	.	.	1195	1200
Ser	Asn	Gln	Gly	Phe	Ser	Ser	Arg	Ser	Asp	Lys	Lys	Gly	Pro	Lys	Thr	
1185	.	.	1190	.	.	1195	.	.	1200	.	.	1205	.	.	1210	1215
Ile	Ala	Glu	Met	Arg	Lys	Gln	Asp	Leu	Ala	Lys	Asp	Thr	Asp	Pro	Leu	
1205	.	.	1210	.	.	1215	.	.	1220	.	.	1225	.	.	1230	1235
Lys	Leu	Lys	Leu	Leu	Asp	Trp	Ile	Glu	Gly	Lys	Glu	Arg	Asn	Ile	Arg	
1220	.	.	1225	.	.	1230	.	.	1235	.	.	1240	.	.	1245	1250
Ala	Leu	Leu	Ser	Thr	Leu	His	Thr	Val	Leu	Trp	Asp	Gly	Glu	Ser	Arg	
1235	.	.	1240	.	.	1245	.	.	1250	.	.	1255	.	.	1260	1265
Trp	Thr	Pro	Val	Gly	Met	Ala	Asp	Leu	Val	Ala	Pro	Glu	Gln	Val	Lys	
1250	.	.	1255	.	.	1260	.	.	1265	.	.	1270	.	.	1275	1280
Lys	His	Tyr	Arg	Arg	Ala	Val	Leu	Ala	Val	His	Pro	Asp	Lys	Ala	Ala	
1265	.	.	1270	.	.	1275	.	.	1280	.	.	1285	.	.	1290	1295
Gly	Gln	Pro	Tyr	Glu	Gln	His	Ala	Lys	Met	Ile	Phe	Met	Glu	Leu	Asn	
1285	.	.	1290	.	.	1295	.	.	1300	.	.	1305	.	.	1310	1315
Asp	Ala	Trp	Ser	Glu	Phe	Glu	Asn	Gln	Gly	Ser	Arg	Pro	Leu	Phe		

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<213> Artificial Sequence

<220>
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